



Newsletter

Autumn 2016



The new logo you see above was adopted at the AGM; our thanks to Tony Leech for the design. We saw it as a crisp and clear depiction of what we do, and the instant recognition of what RGCG means. It arose from a review of how the RGCG communicates to both members and others who share or could share our interests. Our Newsletter and web site will continue as they are, but there was also a need to reach the “could shares”. Hence the RGCG now has a Twitter account, and all three outlets and will use the new logo. Willie Brownlow has been much involved, and has this message:

“I am grateful to Ursula Juta of the Norfolk for Rivers Trust for setting up our Twitter account @RiverGlaven

and building up the “followers” who currently number 160. We are trying to focus on topics that are relevant to the Glaven Valley. Many of our “followers” are from similar organisations to ourselves so the account is proving to be a very useful forum for information on a variety of subjects.

If you have a Twitter account, please follow us on @RiverGlaven and send us anything of interest from the Glaven Valley. We hope to introduce the Twitter feed to the web site shortly so it will be available for everybody to see on the Internet”.

We are now completing a review of the overall RGCG Strategy, which has been running on a four year cycle from 2008. The word Strategy sounds rather grand for a voluntary group, but we

feel it has two very useful purposes. It is a collective way of thinking about the on-going and future activities; but is also useful in making any grant application, albeit even for a modest amount of funding. It shows the application is another step in a process, rather than a one-off task.

The period 2012-2016 was notable for the large injection of money and specialist skills that saw the advance of many of the major projects we wished to do. The funding for this came from the Defra Catchment Restoration Fund, and was followed by the Eel Project. There remains one or two major projects we would like to see done, and behind that a wish-list for the longer term. However there is much to keep us very busy, including

long term issues around water, soil and agriculture, pages 4-5. We now though have just heard some excellent news on farmland ponds,

Local farmer Richard Waddingham has been presented with the Marsh Award for Wetland Conservation at the annual meeting of the Wildfowl and Wetlands Trust (WWT). The prize honours the best individual in local wetland creation. It commemorates the legacy of Sir Peter Scott and the 70th anniversary of the WWT. Richard has farmed at Manor Farm at Briston since the 1950s. Carl Sayer, who with his UCL team has been studying Richard's pond conservation work for ten years, introduced Richard by saying "Richard has inspired countless people to value and love the British countryside. He has been a conservation stalwart of the very best kind, and strikes the balance between nature conservation and farming perfectly". Richard's response was: "I think, as a country, we're on the threshold of realising that water management is more important to us than food. The ponds on my land are special because I haven't made them; they are fed by spring water and are at the source of two rivers".

The first sentence is perceptive, but perhaps there are as yet too few on this threshold. The second sentence shows both an eye for detail and his modesty. Many ponds have arisen from previous generations that dug pits for marl, which in time filled with water; and later used as a dumping ground or overgrown. In that sense Richard did not create them, but he had the knowledge and foresight to see their potential as ponds for wildlife, and the enthusiasm and commitment to tackle the restoration. As Carl says Richard's ponds have given him great inspiration, and it now enthuses the Norfolk Ponds Project, involving a several conservation bodies.

Manor Farm and its Ponds.

Dr Carl Sayer

The 253 hectares on Manor Farm include orchid meadows, grassland margins, old hedges and lanes and bluebell woods. There are forty or so small marl pits in the fields, but also eight crops and intensive farming. Richard has spent his life managing his ponds by traditional methods. The result is a network of ponds that is bucking the national trend by providing habitat with high water quality that is invaluable for biodiversity. Plants, insects, amphibians are all thriving. At a time



A restored pond at Richard Waddingham's Manor Farm at Briston. See also page 1.

when farmland birds in the UK are doing badly, those at Manor Farm are doing well. University College London research shows that farmland birds and pollinating insects derive huge benefits from Richard's ponds. There are more substantial populations of birds, greater diversity, and much higher number of birds visiting, including yellowhammers, linnets and swallows. It is thought that this is due to the much higher numbers of insects that emerge from the open ponds.

Traditional methods are simple in essence: the ponds are managed to have open water with aquatic plants within them and fringe vegetation, but letting in sunlight from the south by removing scrub. Removal of mud and leaf litter during restoration uncovers old seed banks which germinate to give the aquatic plants that belong to this habitat. This enables a balance between plants, insects and birds to be established, and extends the food chain beyond the ponds into the terrestrial landscape.

Geoff Hilton, Chief Scientist at WWT said: "Richard's ponds seem to be key to the birdlife that is flourishing on his land. So maybe the rest of us are missing a trick. It could be that water quality is central to such success; there are all of these forgotten ponds in the countryside that we could restore and manage, and they could be fantastic at propping up farmland bird populations."

Signal Crayfish Trapping and Barrier: and our Native Species

Dr Henry Crawley

Robin Combe continues to do sterling work monitoring and trapping Signal crayfish that exist in very small numbers on the lower Glaven between Bayfield and Letheringsett. A handful were caught in a single location for a brief period. The conclusion is that the few Signals that escaped into the river from Watering Lane some years ago, are fortunately not an expanding population in the main river.

Trapping in Watering Lane over 9 months continues to produce a small number of immature Signal crayfish. The population here has been massively reduced by Robin's trapping over 4 years, and a drop trap prevents them getting into Letheringsett Lake or beyond to the river. The original source of Signals from a pond at Lawn farm is also much reduced and natural predators (pike, perch and eels) have been introduced there to control any future expansion.

Despite all this hard work, we cannot be sure that one day the Signal population will not expand in the main river and migrate upstream towards the flourishing population of native White Clawed Crayfish (WCC) that exists in the river upstream of Letheringsett Mill. This could spell disaster for one of the few remaining healthy populations of WCC in Norfolk (or Southern UK for that matter). Signals out-compete WCC, and carry crayfish plague with some resistance, but which can wipe out the WCCs (as



**From the top: 1. Concrete topped weir with the river flow reduced.
2. Assembly and fixing of overhanging barrier and side support components.
3. Signal crayfish barrier in place and restored river flow.**

has recently occurred on parts of the Wensum).

We also have been considering the barriers to upward migration of Signals on the Glaven. Although Letheringsett Mill is a major barrier, we cannot be sure that it is 100% effective. There are some bypassing water ways. With consultation and support of the riparian owners, the RGCG has proposed and installed an overhanging lip barrier of stainless steel on the main river and a side channel. The design is such that downstream crayfish would find it impossible to get traction on a shiny metal overhang with a plume of water cascading over it. We believe fish and elvers will be able surmount it.

There is a concerted effort by conservationists to preserve WCCs in Norfolk. This is led by the Environment Agency, Norfolk Biodiversity (NCC) and other groups including Norfolk Rivers Trust and the RGCG on the Norfolk Crayfish Group. One important aspect of protection is biosecurity. Transferring disease with muddy boots or dogs and fishing gear from one river to another is a real risk. Clean and dry all equipment as a routine, especially if you go from one river to another; and the dog.

For some years efforts to protect remaining populations of WCC have been taken, including transference of healthy WCCs to isolated streams and suitable habitats that act as 'Ark' sites, in case the remaining populations are overrun. This Ark project has used the Glaven as a source of healthy WCCs in recent years and also as an Ark site in the upper reaches. This is an insurance policy. RGCG volunteers have helped with this project regularly.

The support for the barrier by the Norfolk Crayfish Group has been most welcome, together with design advice from the EA, and financial support from NCC Biodiversity. North Norfolk Engineering of Holt have been very helpful in producing the metalwork for the barrier components.

The installation has just been successfully completed with volunteer labour, and we look forward to monitoring its effectiveness in the future. Thanks go to all those who have contributed to making this happen, in particular the Letheringsett Estate as landowner. Also Laura at Letheringsett Hall who came to our help with electricity and a 50 m cable when the generator we had refused to start; and the Mill for slowing river flow in the two hours it took to install the barrier.

Water, Soil and Agriculture: the Big Debate

Dr Ian Shepherd

Water management in Norfolk begins with the soil which receives our rainfall, and for much of our land this means arable farming. Agriculture has a frontal position in the management of the quality of water. The abstraction for our domestic needs is a matter of both quantity and quality of water resource, and the same applies to our wildlife. There is a need for a three way conversation. The present debate is more limited and polarised, between wildlife and farming. Water security is important to all three. The dismantling of the Common Agriculture Policy gives an opportunity to re-think in this wider context. There is an opportunity to put in place policies and support for farming both for the short and long term, and with it benefit the public water supply and nature conservation.

Anglian Water has a statutory requirement to plan ahead for a secure long term water supply-demand balance. They have done this in a five year investment cycle running from 2015-2040, known as the Water Resource Management Plan (WRMP). The public water supply in Norfolk is largely dependent on abstraction from our aquifers and rivers; as such it potentially 'competes' with the requirement and needs of all wildlife, particular aquatic. The greater the population growth and the demand for water, the more difficult it is to satisfy both domestic supply and wildlife. However there is a shared cause that the water in our natural environment be 'clean', with minimum levels of pollution from agriculture.

Norfolk and East Anglia as a whole is defined by the Environment Agency as an area of extreme water stress due to low rainfall. It is rain water that fills our chalk aquifers, and in turn feeds our rivers, and abstraction can be from aquifer groundwater or river surface. The recharge of our natural underground reservoirs is greatest in the winter months, and least for the rest of the year with less rainfall and increased 'losses' due to evaporation and plant growth. By 2030-2035 additional sources of water will be required for domestic supply to keep ahead of demand.

We are in most of Norfolk already over-abstracting water, to the detriment of the many of our finest sites for wildlife; and seeking levels of growth far in excess of anything previously planned. Plus decades of intensive farming has resulted in pollution issues, which require changes in policies and practice, and sustained funding support from Government to turn around. The good news though

is that the WRMP is implementing where necessary a cutback in abstraction levels where they are adversely impacting on the Special Area of Conservation (SAC) sites. Norfolk is notable for our chalk rivers, freshwater marshes, coastal lagoons and wetland areas which include the Broads, many of which are designated SAC. The necessary 'sustainability reductions' on some abstractions are based on the Water Framework Directive, and Habitat Regulations.

So therefore the sustainability reduction in groundwater abstraction at Hunstanton will restore the water flow through the chalk aquifer to the benefit

of the coastal freshwater marshes, and the coastal lagoon area around the estuaries of the Glaven and Stiffkey. These and other North Norfolk rivers should have a better flow, particularly in the summer months. There will be also be a reduction in surface abstraction from the River Nar SAC. Likewise over the longer term for the Wensum SAC, the largest chalk river in the county, and in turn benefit the Norfolk Broads.

The River Wensum however also suffers worse badly from sedimentation from arable run-off. Silt in rivers results in degradation of the whole ecology, for example the smothering of gravel areas, which impacts on aquatic plants, invertebrates and fish. All our rivers suffer to a greater or lesser degree from this.

This brings us to the longstanding debate between nature conservation and farming practices. With Brexit this has become very high profile, and rightly so. It throws up some huge challenges. The arguments from both sides were well set out in the EDP farming section 22 October, with quotes from various Conservation Reports (panel on this page) and the Farming Union's responses which are shown in the panel on the facing page. Both included a number of statistics.

The marriage between nature conservation and farming is clearly under stress, and in answer to the question which side is right we perhaps get the most common answer; in the broader sense both. But what we tend to forget is that this particular marriage has a third and much needed partner, the public water supply. As hinted at in the first NFU statement, there is the need for all for a clean water resource. Water and soil are intertwined at the most fundamental level. We must

- 55% of UK species have declined since 1970. One in 10 are at risk of disappearing from our countryside. State of Nature Report, September 2016; also, 20% of all impact on species populations was attributed to "intensive management of land"
- The subsidy system has produced the dramatic and disastrous decline, in nature, in species. Dame Helen Ghosh, National Trust Director General, August 2016
- Do we really want to continue the pattern of ever larger agri-business, less connected to communities and out of kilter with nature? Graeme Willis, Campaign to Protect Rural England; 93% decline in turtle dove numbers since 1994, Breeding Bird Survey, 2016
- The natural world is in serious trouble and it needs our help as never before. David Attenborough
- £1.2bn damage to soil caused by farming a year, while populations of farmland birds in England have more than halved in the past 40 years. CPRE report, August 2016



Left. A high risk crop and field: water borne soil erosion running direct into a river.
Right: Source of the run-off, potato field after a heavy burst of rain.

raise our sights, and those of our politicians, to get past the everyday life of a week, and work for the long term aim for a secure and 'clean' water resource; a reversal of the sad decline in our wildlife; and a productive agriculture which delivers the first two aims as well as supplying our food. This is a huge ask, but with the dismantling of the CAP and the need for new and holistic policies and commitment there is an opportunity to rise to the challenge. We must take it.

To do so this we must be clear on one point made by the NFU, farming has not got any more intensive over the past 25 years. This is true, but obscures the fact that intensive farming is a cumulative process; the contamination of our aquifers with agrichemicals has grown year by year. Anglian Water say in their WRMP: "Water quality deterioration due to diffuse source contamination from agriculture will continue to be an issue going forward. Nitrate concentrations will continue to rise in many parts of our groundwater system and are unlikely to decline anytime in the next 20 to 50 years". They also state the solutions to deal with high nitrates are very expensive and some groundwater source will become too difficult or expensive to use. Diffuse pollution is insidious, cannot be seen, but contaminants in our aquifers are monitored by Anglian Water.

At another point on water quality they state: "Concentrations of pesticides in raw water increased markedly following the 2011/2012 drought and in response to high levels of catchment run-off in October 2013". We

- 37,000 km of grass margins by farmers, which help prevent pollution of water and protect hedgerows from agricultural activities
- 130 species of birds by over 1,000 farmers in 2016 Farmland Bird Count, including seven new species
- 234,000 ponds, and an estimated increase of 18% from 1987 to 2007
- 16% fall in total greenhouse gas emissions from agriculture since 1990
- Millions of pounds are spent on agri-environment schemes which have planted or restored over 30,000 km of hedgerows, providing habitat and shelter for a range of wildlife
- It makes little sense to attribute cause and effect to the intensification of agriculture in the UK in the last quarter when there has not been any. NFU Vice-President Guy Smith
- 80% of England's landscape character is now in stable or improving condition.

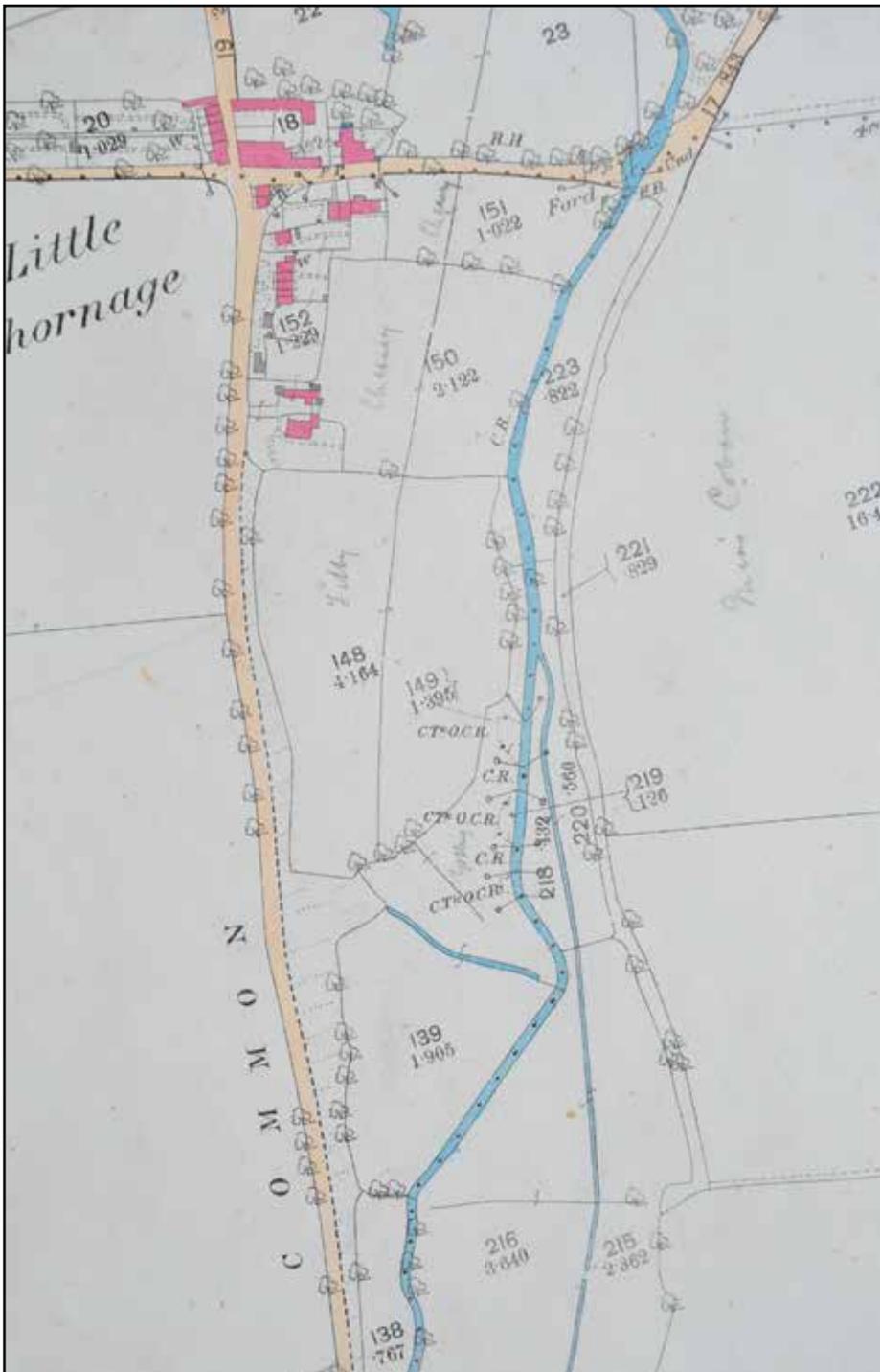
would add to this that silt entering a river system is also cumulative, and apart from nature conservation, can damage interests such as navigation. It is expensive to de-silt; and it will be again the next time it needs to be done.

Run-off pollution after a heavy rain event can be both fast and very noticeable. An example is a high risk crop such as potatoes in a high risk field such as on the slopes of a river valley (see photos above). The compaction of soil and tramlines of heavy machinery can also lead to rainwater coming off the land very quickly.

Farmers are more than ever in an extremely difficult and uncertain future. For decades there has been pressures to produce 'cheap' food in a competitive global market; competition often with lesser environmental, food safety and animal welfare standards; income varying from year to year due to unpredictable global prices in food and other commodities, including fuel and fertilisers; the vagaries of weather and crop yield; and seeking to do their best in difficult circumstances for our wildlife. The financial and environmental costs in the food chain have been externalised. Brexit is an opportunity to make changes for a better and more sustainable future for soil and water management.

A Glaven Meadow Past and Present

Dr Ian Shepherd



1886 1st Edition Ordnance Survey map. The features remain the same today. Prior to 1886, the river had been re-aligned from the west to the east side of the meadow. The original meandering course would have been between the central drainage ditch and the course as shown on this map. NB: for orientation purposes, north is, as usual, at the top,

Little Thornage meadows lie to the immediate south of the lane from the cross-roads to the ford. The area of 27 acres is a County Wildlife Site, designated for the biodiversity of the plants. This is a legacy to hundreds of years of summer grazing cattle, typically a family herd with the bull, cows and calves. Just as can be seen now, in this case with a Dexter breed. These 'wet' river meadows produce an early flush of grass in May, and the stocking level is such that the vegetation is not eaten right down until late October. This pattern of grazing allows for the flourishing of a succession of different species of flowering plants and grasses. This is a historic and iconic landscape and wildlife habitat, impossible to simulate by planting. The 1886 1st edition ordinance map shows the mosaic of meadows and drainage ditches, and the alignment of the river channel, and this remains exactly the same to this day. There is evidence though at some earlier date than 1886 there had been a transverse re-alignment of the river from the west to the east side of the meadows.

Since the end of WW2, nationally some 97% of lowland meadow has been lost; so we are indeed fortunate to retain some on the Glaven. For centuries meadow land was worth perhaps twice that of arable land. The price of both would have sharply increased by the time three of the Glaven Mills (Letheringsett, Thornage and Glandford) were re-built, all very close to 1800. By then the Napoleonic wars had seen trade cut-off with the European mainland with a resulting drive for self-sufficiency. In each case the Mill was re-located, much enlarged, and then if not earlier, the river channel moved to allow a more direct and faster flow. This would better re-charge the ponding area of the Mill.

The Domesday Book records a mill at Letheringsett, and likely there would have been a number of re-builds, one reason being their propensity to catch fire. A 1798 map of the Letheringsett Estate indicates that the move of the channel from the west

Top. Dexter cattle on the meadow next to Walsingham Water Way lane.

Centre. Common Spotted Orchid; with yellow rattle.

Bottom. Stand of common spotted orchids; plus buttercups.

to the east side of the meadow had taken place prior to then; it shows the northern end of the meadows, with the 1886 'east bend' already in place. We can speculate though, that while the re-alignment is in place at 1798, it might have happened not too long after 1740. The diagonal alignment runs between two meadows that were part of the Glaven Farm land holding. While in the 19th C there had been different ownerships on parts of the meadows, that of Glaven Farm was likely stable over centuries. A wealthy and influential landowner then might have been reluctant to see their meadows disturbed. We quote from local historian Basil Cozens-Hardy, in the History of Letheringsett, referring to Glaven Farm:

"This is one of the oldest dwellings in the parish and must have been a farmstead from the earliest of times. Many wayfarers must have passed it as they went along Long Water Walsingham Way (nb a map shows that is from the Ford to the Little Thornage crossroads) to the monastic houses to the west. In the reign of Queen Elizabeth it belonged to Thomas Pettus of Norwich, a much trusted and assiduous alderman, Sheriff in 1600 and Mayor in 1614. It then passed by purchase to Geoffrey Might, the squire of Gunthorpe"....then two other major landowners until.... "John Holmes, the headmaster of Holt Free Grammar School acquired in about 1740". So a best guess of the river realignment would be within the second half of the 1700s. The name Water Walsingham Way indicates that the river would have had a much stronger flow and the meadows would have been very much wetter than we see today.

The present day area of concentration of wetland flowers, grasses and rushes mark out for us the original broad line of flow of the river, or perhaps more apt the spread of water across the meadows. For the 'wayfarers', in those 'wetter days' of near zero abstraction, the meadows flowers would have likely carpeted the whole site. Only along the original and lower alignment of the river, where the hy-





Clockwise from top left: Marsh Thistle; Ragged Robin; Fleabane; Lady's Smock, always the first to flower; white flowering Common Spotted Orchid, rather than the purple variety seen on page 7.



draulic contact with the water table is greatest, do we now see an abundance of flowering plants, and the greatest diversity of vegetation.

In the 1950s and 1960s there was a greater emphasis on land drainage which coincided with a step-change in large scale water abstraction for population growth and a rapid increase in per capita consumption of water. At this time the meadows were becoming

of little financial value to the landowner or tenant farmer. Farming had become much more intensive, globalisation of the food market was accelerating, and the grazing of cattle on river meadows was becoming a modest side-income, or hobby. The much bigger value could come where a meadow fronted the river and there was a licence in place to abstract water from the river for use of irrigation of arable land. The introduction of the original 1992 Countryside Stewardship Scheme (CSS) however enabled conservation grazing to be reintroduced by two successive ten years periods at Little Thornage and elsewhere.

To bring us up to date, following the 2015 CAP review, the overall annual expenditure on agri-environment schemes dropped to 60% of what it had been. Within that the grant for a CSS meadow fell far more, being placed in the basic standard payment tier. The protection of our remaining 3% meadows relies entirely on the goodwill of farmers and landowners, and many will seek to maintain

as they are. But the financial incentive with re-fencing costs included, is strongly negative; any inclination to turn to an alternative use for the meadows, or just neglect, leaves us in a perilous situation. With the dismantling of the CAP, a key part of developing new policies must be to support the habitats and landscapes of our countryside; what can be more precious than our river meadows.

We aim to work in friendly collaboration with landowners and farmers, conservation organisations and relevant public bodies.

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